

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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CONTENTS

	PAGE
Editorial Comment	
Empire Aviation	711
The Handley Page "Hamlet"	713
Over the Alps with a Bristol "Cherub" Engine	714
Light 'Plane Club Doings	716
Beardmore "Cyclone" Engine	717
Macchi M.39 Monoplane	718
De Havilland "Hercules"	719
Premiers and Aviation	720
Royal Air Force	723
R.A.F. Intelligence	723
"From the Four Winds"	724

DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

1926	
Nov. 4	Mr. G. F. Mucklow. "Hydrogen as an Auxiliary Fuel for a Solid Injection Engine." Joint Meeting R.Ae.S. and Inst.A.E.
Nov. 11	Schneider Cup Race at Norfolk, Virginia, U.S.A.
Nov. 16	Mr. A. G. von Baumhauer, Sub-Director of the Government Aeronautical Laboratories, Amsterdam. "Some Notes on the Possibilities of Progress in Aviation," before Inst.Ae.E.
Nov. 18	Mr. R. S. Capon. "Methods of Performance Testing and Analysis," before R.Ae.S.
Nov. 21	Lecture, "Meteorology in the Service of Msn," by Dr. G. C. Simpson, C.B., at the Guildhouse, Eccleston Square, S.W.1.
Nov. 30	Mr. F. S. Barton, M.A., F.Inst.P. "Air Photography Apparatus," before Inst.Ae.E.
Dec. 2	Mr. P. B. Bradshaw. "Alloy Steels for Aero Work," before R.Ae.S.
Dec. 3-19	Paris Aero Show

EDITORIAL COMMENT.



Empire Aviation

AM proposing for your consideration the creation of these two long-distance air routes upon what I will call a mosaic plan. We are all too hard up for any one of us to undertake the heavy cost of an air route to Singapore or an air route to Cape Town. If, then, we are to form these routes, we must each of us insert our particular stone in the design. I have suggested a way in which we might each take our share and in which, what is no less important, military and civil aviation might co-operate at least for the pioneer work. My proposal involves no subsidy; it involves nothing more than co-operation between one Government and another and between military and civil flying."

This sentence, quoted from the speech made by the Secretary of State for Air, Sir Samuel Hoare, to delegates and representatives of the Imperial Conference gathered on October 28 to discuss Imperial Air Communications, sums up in a few words the broad fundamental principle upon which must be based future British aviation policy if full advantage is to be taken of the incalculable potentialities which the air holds out. In our issue of October 21, 1926, we stated in these columns: "The all-important subject, however, so far as the Imperial Conference is concerned, will undoubtedly be that of Dominion participation in financing Empire Aviation. We believe that all the representatives fully realise the importance of this, and, consequently, we look forward hopefully to the Conference bearing fruit." The spirit which has been evident during all the discussions that have taken place so far has been such as fully to justify that hope. Without exception one and all of the Dominion representatives have expressed willingness and indeed determination, to share in the expenses of organised Empire air routes, in return, naturally, for a voice in the organisation of such routes.

Elsewhere in this issue of FLIGHT we give a very extensive resume of Sir Samuel Hoare's speech and of the contributions to the discussion which followed

it. We make no apology for taking up so much space with "heavy" matter, since the subject is one the vital importance of which cannot well be exaggerated. As we have repeatedly pointed out in these columns, there is one way, and one way only, in which aviation can be made of the greatest possible service to the British Empire, and that is by planning it on Imperial lines. In his speech Sir Samuel Hoare pointed out that although he was on that occasion confining himself to the civil side of the question, the civil and military aspects were inextricably connected, and that the development of Imperial air lines, whether by aeroplane or airship, was a vital factor in the problem of Empire defence. He outlined what had already been accomplished at home, not, as he said, because he underestimated what had been done in Australia and Canada, for instance, but because he was for the moment taking London as the terminus of the principal Empire air routes. And he asked whether it would be possible for the Government of India to consider the extension of the Cairo-Karachi route, which will be opened next year, on to Bombay and Calcutta, and for the Government of Burma to carry it a stage farther by extending the service to Rangoon. At the far end of the route Sir Samuel suggested that the Air Force of Australia might, at any rate experimentally, join up with an occasional service. Similarly in Africa, the Secretary of State for Air suggested that linking up with the experimental service being organised by a private company with the help of the Governments of Kenya, Uganda, and Sudan, and continuing the Khartum-Kisumu route, lines should be established in the north between Egypt and Khartum, and in the south between Kisumu and Cape Town. He expressed willingness on the part of the Mother Country to arrange for a certain number of flights to carry mails and passengers by R.A.F. machines between Egypt and Khartum, and asked whether South Africa would consider the making of

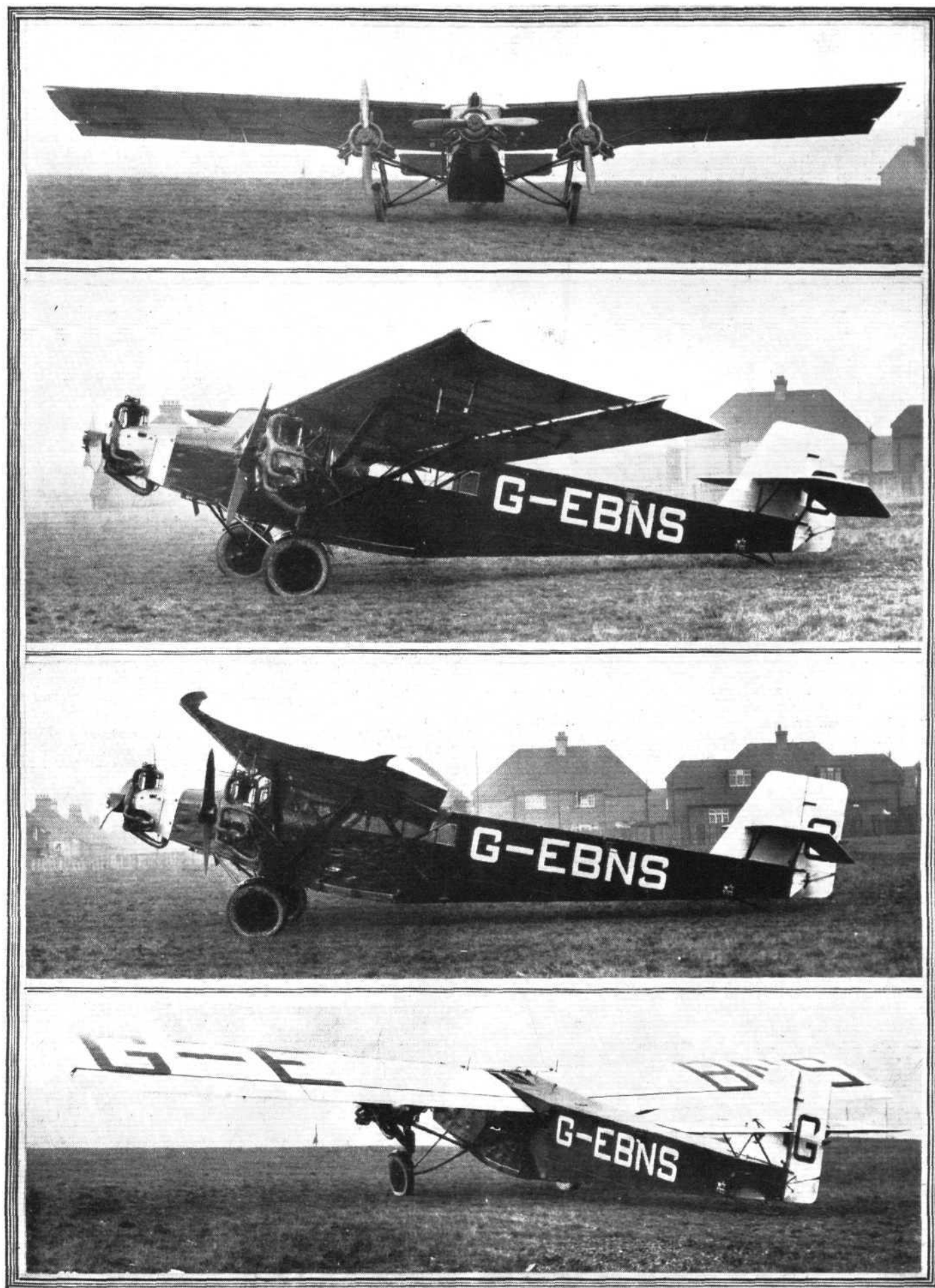
a certain number of flights by the South African Air Force between Cape Town and Uganda. In the meantime we at home should be interesting ourselves in the link between London and Egypt. Evidently pending the establishment of airship services, although he did not definitely say so, work is progressing on seaplanes and Sir Samuel Hoare remarked that already considerable progress had been made with the development of flying boats suitable for the passage of the Mediterranean. It is now several years ago that FLIGHT first pointed out the necessity for encouraging seagoing flying boats or seaplanes capable of operating on Empire air routes, and we are therefore extremely gratified to have the assurance of the Secretary of State for air that this important subject is being kept well in mind and that progress is being made. The seaplane is a necessity to the first stage of an "all-red air route operated by heavier-than-air craft, and we do know what seaplanes are capable of, while we still have to discover the capabilities of the airship.

During the discussion following Sir Samuel Hoare's speech practically all the delegates expressed their willingness to help, Lord Winterton, Parliamentary Under-Secretary of State for India, in particular being emphatic in his statement that the view of the Indian Air Board was that the Government of India should claim a right to participate as a principal in any contracts for air services in which India was interested.

During his speech Sir Samuel Hoare made the most valuable suggestion that if possible arrangements should be made for holding, between now and the next Imperial Conference, an *Imperial Air Conference* at some suitable centre in the Empire. We sincerely trust it will be found possible to carry this suggestion into effect. Altogether the discussions that have so far taken place leave one with the feeling that at last we are on the right track and are making up our minds to tackle aviation Imperially.



A 1,300-H.P. FLYING BOAT : This photograph shows the new Dornier "Super-Wal," fitted with two Rolls-Royce "Condor" engines, in flight over Lake Constance, where it recently underwent its first flying tests. This machine has seating accommodation for 21 passengers in two separate cabins. An idea of the size of the machine may be formed when it is pointed out that the wing span is 28.5 m. (93 ft. 6 in.) and the wing area 143 sq. m. (1,540 sq. ft.).



AN INTERESTING THREE-ENGINED AEROPLANE : Four views of the Handley Page "Hamlet" (three Bristol "Lucifer" engines), which was illustrated and described in detail in our issue of October 14, 1926. In the three-quarter front view the leading edge slot is closed, while in the side view it is shown open.

OVER THE ALPS WITH A BRISTOL "CHERUB" ENGINE

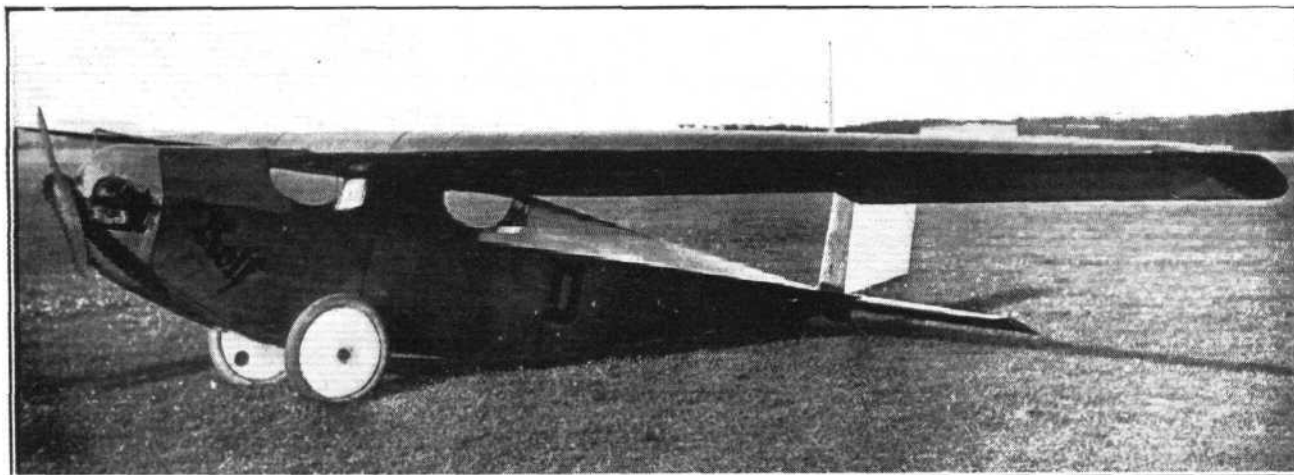
1,000 Miles in 14 Hours 20 Minutes and Altitude of 14,750 Ft. Reached

THE flight from Munich to Rome over the whole range of the Alps, recently carried out by Herr Eberhard von Conta, on a Messerschmitt Monoplane, fitted with a Bristol "Cherub" Series III engine, ranks as one of the most notable flights ever completed by a light aircraft, and is a remarkable tribute to the courage and determination of the pilot and of his passenger, Dr. Ing. von Langsdorff, the well-known German aeronautical writer.

In an account of the flight prepared by Herr Eberhard von

Leaving Klagenfurt I started over Villach and crossed the Karawanken mountains diagonally at 4,000 m. height towards Verona. Upon entering the Po plain, this was entirely enveloped in clouds, so that with the mountains round me at a height of 4,000 m. I wound my way 1,500 m. below their summit through the Po valley. Upon reaching the beginning of the mountains the wind had shifted and I now had a dead west wind.

"On account of the rapidly approaching darkness and the



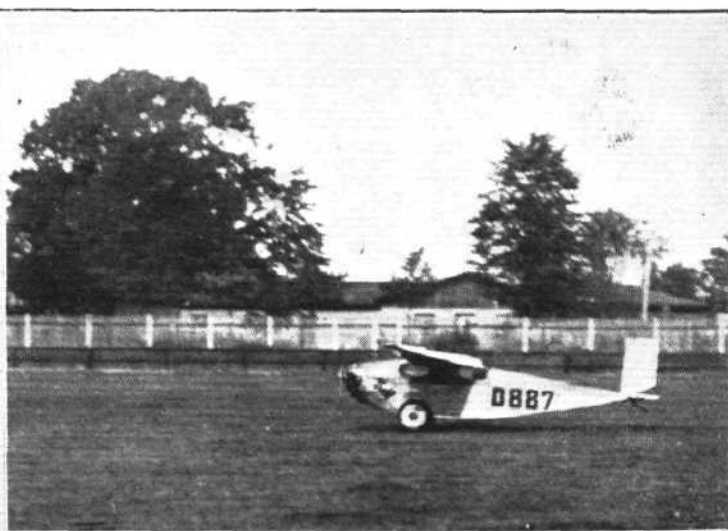
THE MESSERSCHMITT MONOPLANE : It was on this machine, fitted with a Bristol "Cherub" engine, that Von Conta and von Langsdorff made the flight across the Alps from Munich to Rome.

Conta, he mentions that the first delays were encountered at Munich, owing to the fact that the official papers required from the German authorities and applied for six weeks previously were not available. However, at 9.20 a.m., on September 24, the flight was commenced.

"Before reaching Innsbruck," writes Herr von Conta, "I was already flying over a dense cloud bank which led me towards the chain of mountains. On reaching Innsbruck I had already attained a height of 4,000 m. (13,000 ft.), with

wind being against me, it was impossible for me to reach Verona, and I therefore landed the machine among the olive and the maize fields, at Susegana, 35 kms. north of Venice. The Italians kept me there until mid-day on September 25, as before I could proceed I had to await permission from the authorities at Bologna to continue my flight.

"At 1.20 p.m. I started for Padua in order to obtain some petrol. After 55 mins. I landed at Padua. It was the greatest difficulty to obtain benzol, and it was not until I had

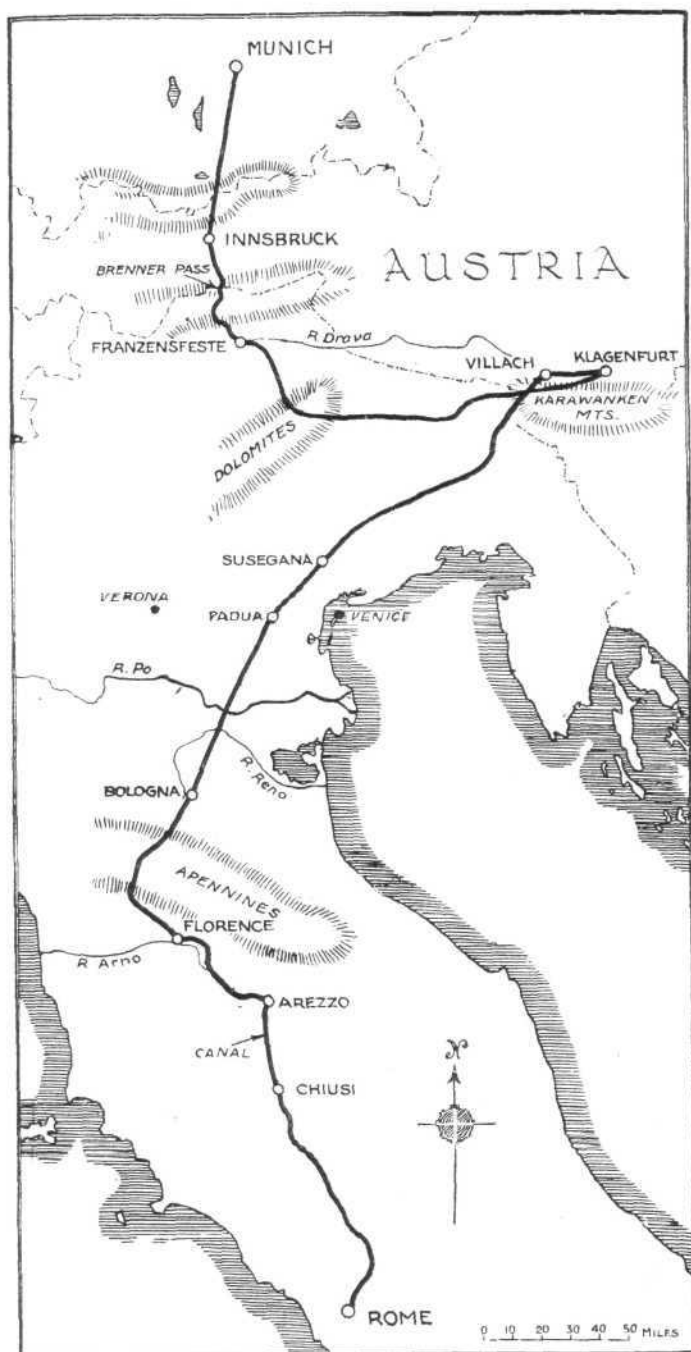


MUNICH TO ROME WITH A BRISTOL "CHERUB" : On the left, the Messerschmitt monoplane in the air and, on the right, taking off.

the engine running at 2,750 r.p.m. In the Brenner Pass I had reached a height of 4,500 m. (14,750 ft.). Then unpleasant currents began to make themselves noticeable, but I flew on through snow clouds, which were travelling from west to east. Up to Franzensfeste it was possible for me to keep my course to Verona. At Brixen, however, snow and heaping clouds prevented my flying farther southwards, and I was forced to turn off by the River Drave, and over the Dolomites in Austria. After 2 hrs. 40 mins. flying, I reached Klagenfurt.

tried six chemists that I was fortunate enough to be able to obtain 3 litres. At 5.10 p.m. I again started, and after 65 mins. landed in Bologna. Here we had the same difficulty with benzol, and this was our chief difficulty throughout the flight.

"On September 26 the weather was very bad in the morning. Nevertheless, an Italian Air Force Captain flew off in the direction of Florence, but after 15 mins. he had to turn back, as the rain prevented his proceeding any farther. The



OVER THE ALPS WITH A "CHERUB": Sketch map showing the route followed by the Messerschmitt monoplane in its flight from Munich to Rome.

same afternoon I attempted to fly over the Appenines, height 2,000 m. (6,600 ft.). I flew along the Reno valley and came to the highest peaks of the Appenine range. The brewing of a heavy storm compelled me to return. The difference in times between the outward and return flight into the mountains is interesting. On the outward flight I took 48 mins., and on the return flight, including landing only 14 mins. The officers can confirm what a great hindrance the Appenine group of mountains is to flying. The air currents are much more terrible there than in any part of Germany.

"On September 27 I had to fly over the Appenines to Florence. On starting I was at a height of 2,700 m. (8,850 ft.). Further climbing was impossible owing to the endless cloud banks. Upon entering the high range of the Appenines at the same spot where days before I had been obliged to turn back, my machine was a plaything at the mercy of the winds in the valley. I was completely forced down to about 1,000 m. (3,300 ft.), and the valley was so narrow that it was impossible for me to turn, whilst the winds sweeping the sides of the valley were of such strength that on several occasions the machine was jerked 90° from its horizontal position.

"Had I not had an extraordinarily good engine, combined with the good qualities of the Messerschmitt machine, I should certainly have been dashed to pieces on the steep slopes. No words could exaggerate this incident. The

official barographs are now being checked, unsealed and photographed by the authorities, and the photographs will substantiate my experience during this flight over the Appenines.

"I did not actually go to Florence, as the whole town was experiencing a heavy thunderstorm, but I flew in the rain as close to the town as I could and then I decided to fly on to a balloon station, which, however, was already known to the Italian aviators as unsuitable for landing on account of its many trenches. On landing I ran into one of these trenches, and lost my right wheel, but in three hours' time the damage was repaired. The flight from Bologna to Florence had taken 1 hr. 40 mins. The still pouring rain made me decide to wait till evening before attempting to reach the very small aerodrome which is situated in the centre of the town by the chief railway station. On September 28 still rain and storm. Next day, in spite of conditions being unchanged, I started in order to take advantage of the wind at the beginning, and I did not return to this place again. After flying in the rain for 28 mins. I first flew along the Arno valley, then along the canal between Arezzo and Chiusi. The only possible landing places were the railway lines or on either side of the river channel. Upon reaching the Tiber, the river which flows through Rome, landing places were again more numerous, and after 2 hrs. 45 mins. I landed safely at the aerodrome of Centocelle near Rome."

The arrival of the machine at Rome created the greatest possible interest amongst aeronautical enthusiasts, and Herr von Conta was invited to take part in the competition for the International Cup of Italy, which was held between October 6 and 10. It was found, however, that official participation was not possible as, according to the rules, it was only for machines with engines of from 40 to 100 h.p., and the "Cherub" did not come within this category. The Italian authorities, however, were so interested that it was arranged for the machine to take part in the 300 km. triangular flight on October 10, whilst on the previous day it was flown before the military, naval and civil authorities.

A message received from Herr von Conta from Rome states



OVER THE ALPS: This photograph shows Lieut. Eberhard von Conta, who piloted the Messerschmitt monoplane with Bristol "Cherub" engine over the Alps during the flight from Munich to Rome. On the right is seen Dr. von Langsdorff, who was Conta's passenger on the flight.

that seven machines in all started upon the 300 km. flight. Of these only four completed the course, including the "Cherub"-engined Messerschmitt machine.

The following expressions of appreciation have been received by the Bristol Aeroplane Company:—

"An opinion of your engine is not hard to give, and it can be done in a few words—your Bristol 'Cherub' Series III engine is the most reliable engine with which I have ever flown. This is not the opinion of a critic at his desk, but the opinion of an aviator who has proved your engine through-

out the Appenine flight, when it was equal to all emergencies.

"EBERHARD VON CONTA, (pilot)"

"It is a pleasure to me to inform you that the Bristol 'Cherub' engine behaved magnificently during this flight, and I believe that the flight, which is a world's record performance as regards height for a light two-seater and which is the first crossing of the whole range of the Alps, is one of the greatest performances accomplished with your Bristol 'Cherub' engine.

"DR. ING. V. LANGSDORFF (passenger)"

LIGHT PLANE

CLUB DOINGS

London Aeroplane Club

The total flying time for the week was 25 hrs., 30 mins. The weather conditions were responsible for three blank days.

The following Members received flying instruction:—T. C. Sharwood, E. J. R. King, F. Clarkson, Miss Fletcher, G. Eady, M. P. Susman, H. Spooner, G. C. Bonner, J. S. Boulton, L. J. C. Mitchell, G. H. S. Mills, A. J. Richardson, J. J. Hofer, N. J. S. McLeod, E. A. Lingard, J. H. Simson, J. L. Gardner.

The following Members made solo flights:—Lady Bailey, N. J. Hulbert, R. Malcolm, Miss O'Brien, E. L. O. Baddeley, O. J. Tapper, L. J. C. Mitchell, E. E. Stammers, J. H. Saffery, N. Jones, A. R. Ogston, K. V. Wright, Major K. M. Beaumont, G. H. Craig, A. G. D. Alderson, W. Hay, S. O. Bradshaw, C. A. Rogers, E. S. Brough.

The following Members had joy rides:—L. C. Davey, R. C. Presland, G. H. Craig, Miss Samuelson, Miss McKay, B. Waugh, C. G. Denton, Miss Gallien, R. E. Gifford, P. G. Lucas.

The total flying for the month of October was 183 hrs. 5 mins.

The Hampshire Aeroplane Club

Owing to the indisposition of the Publicity Secretary the usual report will not be forthcoming until next week.

Last Sunday, October 24, GEBOW was flown down to Emsworth by Mr. Musselwhite, with Mr. Perfect as passenger, in answer to Rear-Admiral Preston's kind invitation to lunch. After lunch a start was made for the Seven Sisters, with the idea of meeting Sir Alan Cobham there. As far as one can tell GEBOW was the only machine, other than Sir Alan's, which landed at Berling Gap.

Lancashire Aero Club

REPORT for week ending October 22:—Total time for week, 25 hrs. 40 mins., made up as follows:—Dual with Messrs. Stack, Cantrill and Scholes. Messrs Twemlow 2 hrs. 20 mins.; Blagden 2 hrs.; Miss Brown 1 hr. 20 mins.; Messrs. Crosthwaite, 1 hr.; Newton, 1 hr.; Leigh, 55 mins.; Hughes, 50 mins.; Wade, 45 mins.; Stern, 40 mins.; Benson, 40 mins. Miss Emery, 35 mins. Messrs. Shiers, 40 mins.; Goodyear, 35 mins.; Woods, 25 mins.; Gattrell, 20 mins.; Abdalla, 20 mins.; Cohen, 20 mins.; Harden, 20 mins.; Moore, 20 mins.; Anderson, 15 mins.; Hardy, 15 mins.; Leeming, 15 mins.; Fallon, 15 mins.; Costa, 15 mins.; Barker, 15 mins.; Barnes, 15 mins.; Adshedd, 10 mins.

Solo.—Messrs. Costa, 2 hrs. 15 mins.; Lacayo, 40 mins.; Leeming, 20 mins. Williams, 30 mins.; Goodfellow, 20 mins.

Joy-rides with Messrs. Goodfellow, Leeming and Lacayo, 2 hrs. 40 mins.

Test flights, 1 hr. 35 mins.

It is now no longer a secret that a very sporting and ambitious light plane flight is to be attempted by Mr. T. N. Stack, a member and chief instructor of the Club and Mr. Leete, another member who has represented the Club at several inter-club displays. There is no need to go into details of the long-distance flight which they are attempting on two D.H. Moths; it is sufficient to say that the Club was so impressed with the sporting nature of the effort and its value to the light plane movement as a whole in the event of success that they took the line of giving Mr. Stack special leave of absence from his duties at a few days' notice in order to enable him to carry out the flight. We wish them both all possible good fortune and success and (like the mothers of the American world fliers) we have "sent them away with a smile and will welcome them home with beers."

The Club has been exceedingly fortunate in obtaining at short notice as Mr. Stack's deputy the well-known pilot, Mr. H. A. Brown. After a distinguished record in the R.N.A.S. and R.A.F., Mr. Brown was the leading pilot of the Avro joy-ride company in the years immediately following the war. For the last five years he has been the chief instructor at Barcelona and has a record of over 3,000 hours' flying.

Midland Aero Club, Ltd.

REPORT for week ending October 23.—The total flying time was 6 hrs. 28 mins. The following members were given dual instruction: S. H. Smith, A. B. Gibbons, C. Fellowes, H. Smith.

The following members made solo flights: H. J. Willis, W. Swann, R. L. Jackson, E. J. Brighton, J. Brinton, C. L. Knox.

The club moved into their new premises during the week, as the Hangar previously used is now in the occupation of the R.A.F.

Bad weather has again restricted flying.

REPORT for week ending October 31.—The total flying time was 8 hrs. 30 mins.

The following members had dual instruction:—A. B. Gibbons, H. Smith, C. Fellowes, C. L. Knox.

The following members made solo flights:—E. J. Brighton, W. Swann, C. L. Knox, R. L. Jackson. Mr. L. V. Mann was given a passenger flight.

Very little flying was possible on Sunday last owing to bad weather.

Newcastle-upon-Tyne Aero Club, Ltd.

REPORT for week ending, October 24.—Total flying time, 24 hrs. 45 mins. Dual with Mr. Parkinson, 19 hrs. 20 mins., solo 5 hrs. 25 mins.; tests 10 mins.

The following members flew under instruction:—Miss C. R. Leathart, Messrs. J. M. Kennedy, H. Ellis, J. D. Irving, D. Matthews, R. Stawart,

Accident to French Aircraft, F-AIEB

THE Air Ministry announces:—As a result of the investigation into the circumstances of the accident to the French Aircraft F-AIEB, which occurred near Dymchurch on 18th August last, the Inspector of Accidents has arrived at the following conclusions:—

(1) That the aircraft came into collision with the roof of a farm building when the pilot was manœuvring to land.

(2) That the collision was due to an error of judgment on the part of the pilot.

M. Bainbridge, T. E. M. Wardill, F. L. Turnbull, R. Miesegaes, C. E. Craig A. D. Bruce, R. Whitfield, and J. N. Charlton.

The following members flew solo:—Mr. H. Ellis, Mr. J. D. Irving, Lord Ossulston with Mr. Heppell and Mr. D. Matthews as passengers. Mr. F. H. Phillips with Mr. Weeks. Dr. H. L. B. Dixon with Miss Howard, and Mr. Phillips. Mr. R. N. Thompson with Mr. H. Ellis. Mr. C. Thompson Junr., with Mr. Osborn. Mr. W. Baxter Ellis with Mr. H. Ellis.

Mr. J. D. Irving went solo on the 21st, putting up an excellent flight and landing.

FLYING report for week ending October 31.—Total flying time, 15 hrs. 30 mins., all on LX; LY is awaiting the completion of top overhaul of engine. Dual, 6 hrs. 5 mins. Solo, 9 hrs. 25 mins.

The following Members flew under instruction with Mr. Parkinson:—Miss Leathart, Mr. C. E. Craig, Mr. C. E. Shaw, Mr. D. Matthews, Mr. R. Whitfield.

The following Pilot Members flew with passengers:—Lord Ossulston, with the Earl of Tankerville, Mr. Matthews, Mr. Atkinson, and Mr. Turnbull.

Mr. Forsyth Heppell, with Mr. Wardill, Mr. H. Ellis, Mr. Stawart.

Mr. R. N. Thompson with Miss Leathart, Mrs. Marks and Mr. Watts (Mr. Thompson is always sure of anyone he asks to go as passenger with him; he is regarded as the safe and steady pilot, who will not do tricks).

Mr. W. Baxter Ellis with Mrs. Ellis, Miss Nesbit, Mr. Douglas, and Mr. Nicholson.

Mr. C. Thompson, with Mr. Watts and Miss James.

Dr. H. L. B. Dixon, with Mr. Dixon, Mr. Whitfield, Mr. Henderson and Mr. L. Wilkinson.

Mr. F. H. Phillips with Mr. Annandale, and Mr. J. Bell.

Miss Leathart, Mr. H. Ellis and Mr. Matthews flew solo during the week, Miss Leathart being "launched" on Monday morning and Mr. Matthews in the afternoon.

On Monday, in spite of very bad weather conditions and a considerable quantity of snow, Lord Ossulston travelled by car to the Aerodrome from Chillingham Castle, some 40 miles, with the Earl of Tankerville, his father, as passenger, and then flew with him back to Chillingham, landing there and returning to the Aerodrome solo.

The Earl of Tankerville is 75 years of age, and made the flight very largely with the object of showing his confidence in flying, as he considers, as the Club has usually felt, that such flights do much good.

Mr. Parkinson is taking a month's rest, so the Pilot Members will now make up for lost time, as there will always be one machine available for them. It will be noted that they have started well this week. There was a good attendance on Saturday and Sunday.

Dr. Dixon has very kindly loaned a piano to the Club, and now that flying finishes early, some happy evenings are spent in the Club house. Another valuable aid to comfort is the gift of a portable stove by Lord Ossulston, for which certain members of the staff are very grateful.

The Yorkshire Aeroplane Club, Ltd.

REPORT for week ending October 29.—Total flying time, 12 hrs. 5 mins., made up as follows: Dual instruction, 11 hrs. 15 mins.; solo, 30 mins.; Tests, 10 mins.; Joy-rides, 10 mins.

The following flew solo:—Messrs. Dawson and Wood. Captain West gave dual instruction to the following Members:—Messrs. Dawson (L.S.) Gratwick, Harvey, Mann, Oglesby, Pigg, Watson, Wilson, Winn, Capt. Beaumont, and Miss Woodhead.

The weather has been poor (but honest) for most of the week, with fog in the morning and half-a-gale in the afternoon. These conditions evidently affect the solo time more than the dual; in these circumstances, we have initiated a research to demonstrate the coincidence of solo time with sunlight.

This week we succoured an orphan of the storm, when a Hyderabad from Bircham Newton arrived with an inch of snow on the top plane. He stayed with us one night, paid his shot like a man, and went away again next morning. We are eagerly waiting for his next visit, after which we shall commence negotiations for the purchase of our hangar.

Mr. Rimmer is still with us, waiting with commendable patience for a fine day to complete his work for Messrs. Aeroflins.

We have no less than five pupils ready to go solo, but have been unable to launch them in this weather. Mr. Watson grew tired of waiting, and set off with Captain West to find Harrogate; an Odyssey which will prove historic in the annals of the Club. Having passed vertically above it, he proceeded to look for it at Knaresborough, Boroughbridge, Malton, Pocklington and York, only desisting with the sunset.

The engine in G-EBNN has been down for a top overhaul. Our new cylinder heads have phosphor-bronze valve seatings.

Rumour has it that when the production "Bluebird" appears, it will be found that she has suffered a sea change (at Brough) into something not quite so rich and strange. The tail skid will, however, remain unaltered.

We are asked to contradict our statement of last week that two members had bought a pig (less engine) in a poke. This is indignantly denied: the pig was given to them.

(3) That no defect developed in the aircraft or any of the engines during the flight and that the pilot was attempting to land on account of the bad weather conditions which prevailed at the time.

Royal Aero Club Monthly House Dinner

THE monthly house dinner will be held at the Club on Wednesday, November 10, 1926, at 7 o'clock. Mr. F. Handley Page will open a discussion on "British Aviation," and the chair will be taken by Lord Thomson.

THE BEARDMORE "CYCLONE" AERO ENGINE

900 H.P. at 1,350 R.P.M.

FROM time to time during the last three or four years, rumour has been busy with engines of the heavy-oil type working on what is frequently described as the "semi-Diesel principle," and it has become known that experiments and research is going on with a view to developing this type for use in aircraft, the main advantage advanced for its adoption being the reduced fire risk which the use of heavy oil in place of petrol might be expected to bring with it. Among the firms who are rumoured to be working on the problem is that of Wm. Beardmore & Co., Ltd., who are believed to have made very good progress in this direction. However that may be, this firm has also been doing a great deal of research work along rather different lines, and as a result have produced aero engines of a type differing very considerably from any hitherto used in aircraft. Among these mention may be made of the "Cyclone," a six-cylinder "in-line" engine, which recently underwent its tests at the Parkhead, Glasgow, works of Beardmore's.

Detailed particulars of this engine may not be published at the moment, but it will be realised that the engine can be said to have reached a practical stage in its development when we say that it develops some 900 h.p. at the very low speed of 1,350 r.p.m., and that for this power the weight is only 2,150 lbs. "dry," a weight-power ratio of 2.4 lbs./h.p.

As the accompanying photographs will show, the "Cyclone" is somewhat similar in external appearance to a semi-Diesel engine, with its tall cylinders and deep crankcase, although

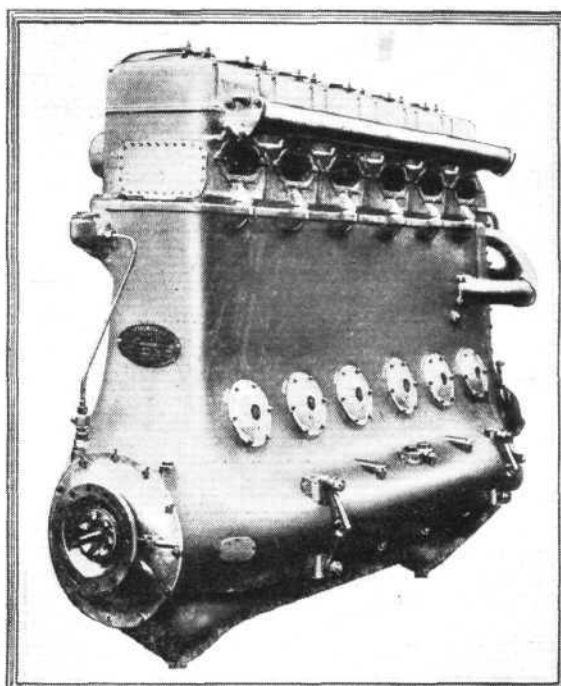
on crude oil. Another engine similar to the "Cyclone," except for the fact that it is of the inverted type, i.e., so mounted that the cylinders project downwards from the crankcase, is the "Typhoon," which also runs on petrol.

We gather that on completion of its test runs the Beardmore "Cyclone" is being sent abroad.

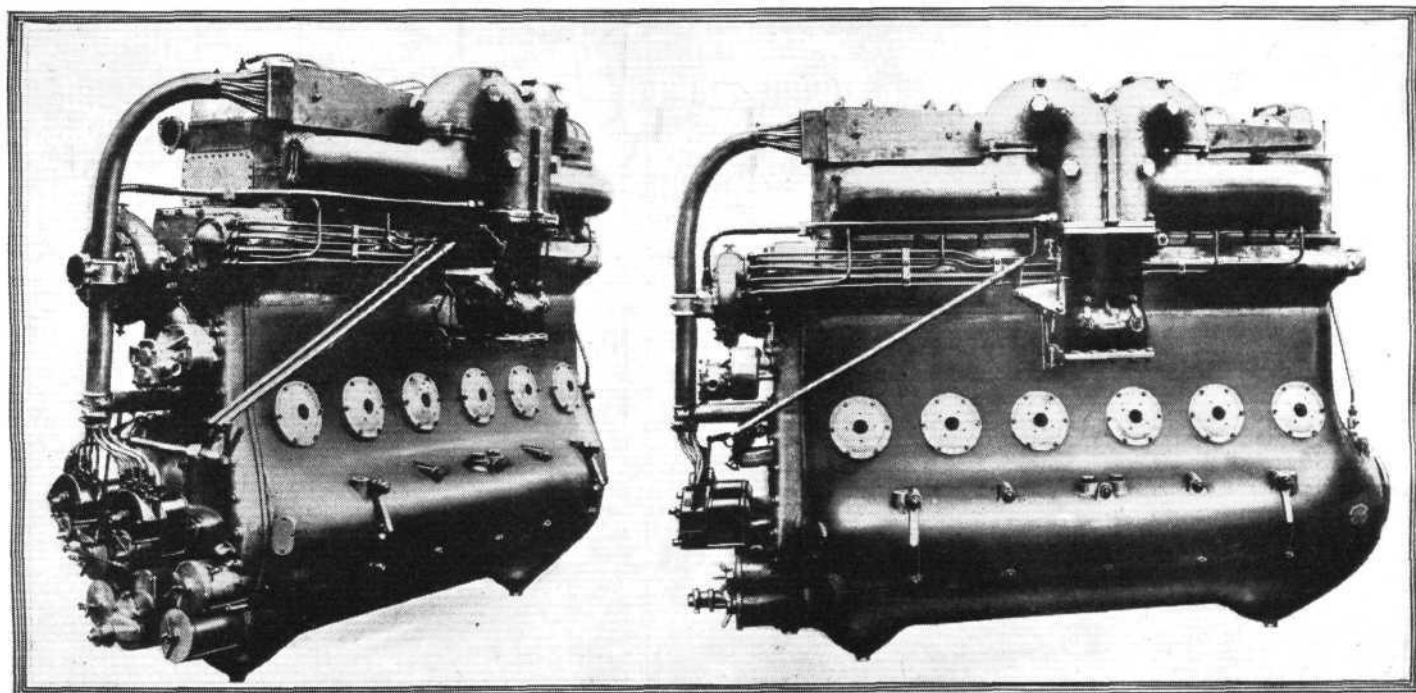
It may be recollected that Beardmore semi-Diesel engines have been supplied to the Canadian National Railway for locomotives, and now it looks as if another Beardmore product were going out of the country for its first practical tests. We have not been able to ascertain definitely where the "Cyclone" is going, but "The Continent" is rumoured to be its destination.

As we have already mentioned, it is not possible at the moment to give details of the construction of the Beardmore "Cyclone," but the following brief particulars may be of interest. The engine has a bore of 8½ in. and a stroke of 12 in., and runs at a normal speed of 1,350 r.p.m. According to whether small or large carburettors are fitted, the Mark II "Cyclone" develops 850 h.p. and 950 h.p. That the engine is by no means of the Diesel type will be clear from the fact that the compression ratio is only 5.25 to 1, by no means a high figure.

Ignition is by two magnetos, the type fitted as standard being the Watford C.6 S.M., the mounting of which can be seen in the photographs. Another view shows the propeller boss, the airscrew being direct-driven and the direction of rotation being left-hand when the



The Beardmore "Cyclone" viewed from the propeller end. The normal power is about 900 h.p. at the remarkably low speed of 1,350 r.p.m.



THE BEARDMORE "CYCLONE": These two views show the rear end and the induction side. This engine has the remarkably low petrol consumption of 0.48 lbs. per horse power per hour.

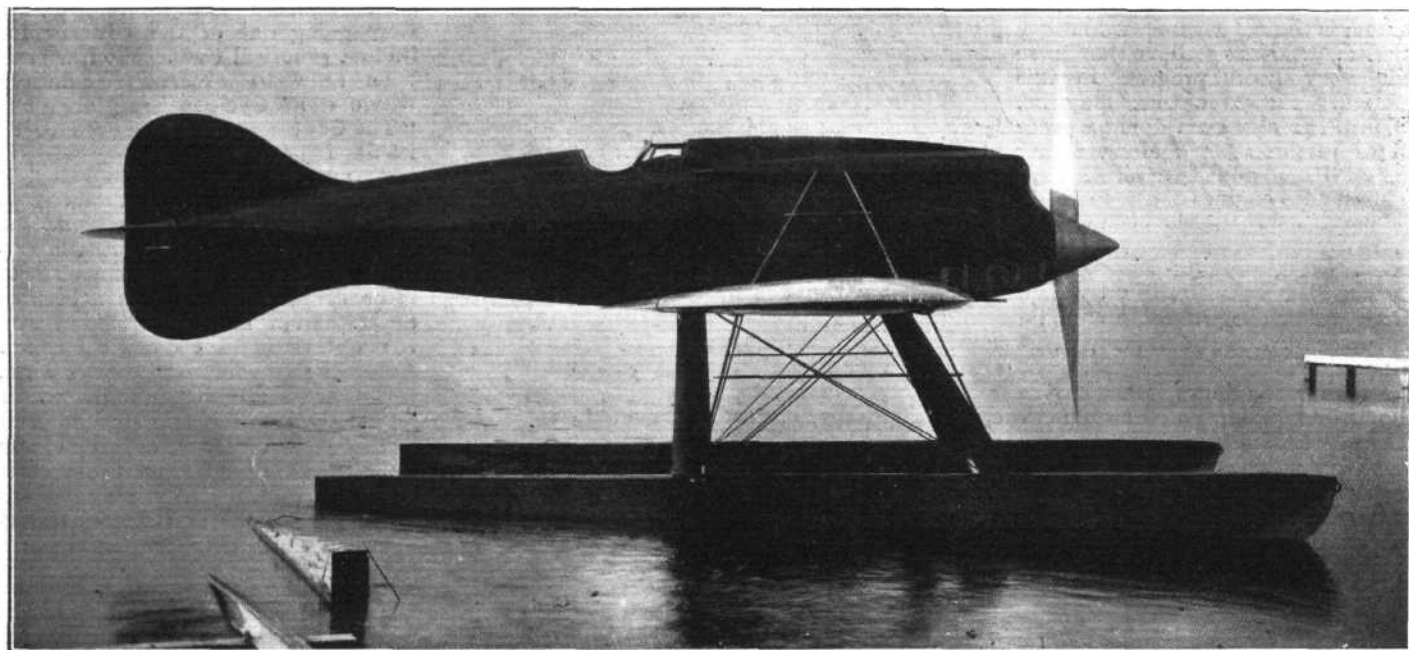
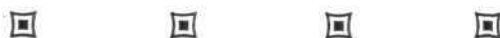
it follows normal aero engine practice in that it burns petrol evaporated by means of a carburettor, the charge being fired in the normal way by magnetos. It might be mentioned here that a very similar type has been produced in which the Diesel principle of compression ignition is employed, and which runs

engine is used as a tractor. The low speed of revolution has, among other advantages, that of enabling propellers of very good efficiency to be used without the necessity of introducing any gearing, and this point alone should be sufficient to make the engine worthy of very serious consideration. When to this

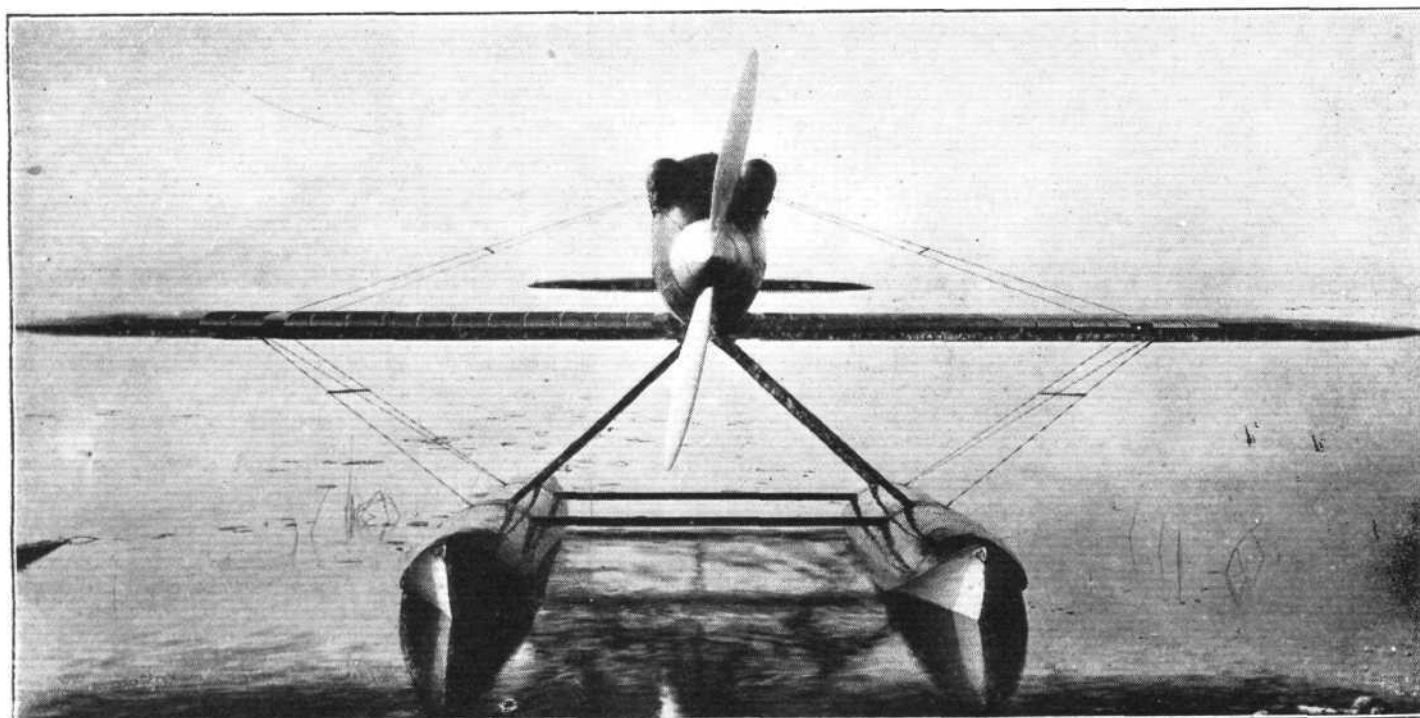
is added the fact that the engine is of quite reasonably low specific weight (*i.e.*, less than $2\frac{1}{2}$ lbs./h.p.), and that the fuel consumption is remarkably low, it will be seen that for flights of long duration at any rate the "Cyclone" should be a very economical proposition. The figure for fuel consumption supplied by the manufacturers is as low as 0.48 lb./h.p./h. and the oil consumption 0.1 lb./h.p./h. Taking round figures the total consumption (based, presumably, on full-throttle running) is one-half pound per horsepower per hour, or at the maximum power of 950 h.p. 475 lbs./hr. Thus the weight of engine plus the

fuel it consumes in one hour is 2,625 lbs., but for 10 hrs. the figure is only 6,900 lbs., which is remarkably low for an engine developing 950 h.p.

The main outside dimensions are as follows:—Length, 80.3 in.; width, 35 in.; height above centre line of crankshaft, 46 in.; height below centre line of crankshaft 15.125 in. The small frontal area is another point in favour of this engine. Incidentally, it should be pointed out that the weight of 2,150 lbs. does not include the weight of the radiator, which is not supplied by the makers, nor does it include the airscrew hub.



STREAMLINING : A side view of the Macchi M.39 low-wing monoplane built for the Schneider Cup Race. The external wing bracing forms a letter N as regards the left bracing, while the landing wires are in the form of a letter A, the cross-stroke being formed by a short horizontal steadying strut or distance piece. The proportion of fixed vertical fin area to rudder area is large. The engine is a Fiat.



A CHALLENGER : This front view shows the Macchi M.39 Monoplane, with Fiat engine, designed and constructed for the forthcoming Schneider Cup Race in Virginia. That the lines are clean there can be no gainsaying. The fuselage is of small cross-sectional area, the wing bracing is a minimum, and the radiators are of the wing surface type. The machine has "speed" written all over it. Whether it will be able to defeat the American defenders remains to be seen.

A NEW MACHINE FOR EMPIRE AVIATION

The D.H. 66 "Hercules," three Bristol "Jupiter VI" Engines

In our issue of July 10, 1926, we published a detailed description, general arrangement drawings, and sketches of constructional details of the de Havilland "Hercules" designed for the Cairo-Karachi air route which is to be opened next year. The first of these machines was inspected by a number

speed so as to be able to combat such strong head winds as must be counted with over the desert air route. As long distances will probably have to be covered without landing, the petrol capacity is high (300 gallons), which naturally means a corresponding reduction in paying load. Relia



THE DE HAVILLAND 66 "HERCULES" : Fitted with three Bristol "Jupiter VI" engines this type of machine is intended for the Cairo-Karachi air route which is to come into operation early in 1927. The Secretary of State for Air, Sir Samuel Hoare, who will be accompanied by Lady Maud Hoare, will be one of the passengers in the first machine to fly out to the East. A detailed description, with general arrangement drawings and sketches of constructional details, was published in our issue of June 10, 1926.

of press representatives and others yesterday at the Stag Lane Aerodrome of the de Havilland Aircraft Co. The machine looks remarkably "clean" for a large three-engined passenger carrier, and its power surplus is such that not only is it capable of flying or even climbing on any two of its three engines, but it has a high cruising speed and a very good top

bility and good performance are the features aimed at rather than extreme economy, and in any case the day has gone when it is fair to judge a machine merely upon the paying load per horse-power which it will carry. So many other factors have to be taken into account that using this basis as a criterion conveys nothing.



THE DE HAVILLAND 66 "HERCULES" : Side View. Note the three rudders and the biplane tail. The protruberance aft of the pilot's cockpit is the fresh-air intake for the cabin. Mounted next to it is the Bristol engine starter by means of which the three main Bristol "Jupiter" engines are started.

IMPERIAL AIR COMMUNICATIONS

Sir Samuel Hoare's Speech at the Imperial Conference

On the occasion of the tenth meeting of the Imperial Conference held at No. 10, Downing Street, on October 28, Mr. Baldwin presiding, the Secretary of State for Air, Sir Samuel Hoare, opened an important discussion on Imperial Air Communications, in which the Prime Ministers of Australia, Canada, New Zealand, and Newfoundland, and Mr. Havenga (South Africa), Mr. McGilligan (Irish Free State) and others took part.

Unfortunately, we have not the space available to give the Air Minister's address in full, and can only give a general outline of his speech, with extracts dealing with the more important points.

In his opening remarks, Sir Samuel said he proposed to deal with this subject from the Civil as distinct from the Military point of view, although he pointed out that the civil and military aspects were inextricably connected, and that the development of Imperial airlines—*aeroplane* or *airship*—were a vital factor in the problem of Empire Defence.

There were at the start, he said, two broad propositions—firstly, the Empire was in urgent need of better communications; secondly, if these were to be improved, a sustained and united effort would be required.

We had now, he proceeded, reached a most important turning point in the development of airways and air communications, and if we looked back over the 23 years of flight—or only as far back as the last Conference of 1923—one must be struck by the speed and the extent of the progress that had already been made. Wider and wider use was being made of civilian air transport, and technical improvement had been made with machines, engines, wireless, and meteorology. As regards safety, what better record could there be than the five million miles flown by British services for four fatal accidents, and the million miles flown in Australia for a single accident?

These results, continued Sir Samuel, seemed to him to show that after years of research and experiment and adventure we had reached a definite stage in the development of flying, from which we could in the near future make progress altogether out of proportion to anything that had been achieved during the last few years. There was to-day no technical or operational reason why by *aeroplane* or *airship* London should not be brought within a fortnight of the farthest cities and territories of the Empire.

He proposed, therefore, to suggest to the Conference different ways in which we could make fuller use of this new instrument in the near future. He would deal chiefly with the British routes and policy because he was for the moment taking London as the terminus of the principal Empire air routes.

Hitherto, whilst certain European services had been safely and punctually operated for several years, there had been no civil air services plying between one part of the Empire and another. In the Middle East an air route between Egypt and Iraq had been regularly flown by military machines carrying mails and official passengers for five years, and it was now proposed to substitute in its place a regular civil line for the carriage of freight and passengers, not only between Cairo and Baghdad, but between Cairo and Karachi. Sir Samuel then gave details of this service, references to which have already been made in *FLIGHT*.

Would it be possible, added Sir Samuel, for the Government of India to consider the question of extending the service across India from Karachi to Bombay or Calcutta? And similarly, for the Government of Burma to carry it a stage farther, to Rangoon? It might then be practicable to link with the civil line experimental flights of the R.A.F. flying boats that it is intended to station in the Far East, and again with the occasional service flights of the R.A.A.F. from Australia? If in the not remote future links could be inserted in some such way, a long chain of great tensile power would be forged across the Empire's framework.

So also with Africa. Just as there must be an Empire Air route to the Far East stretching to Australia and New Zealand, so there must be an Empire air route from London to the Cape with branches diverging to the West African Dependencies. Here again a beginning was being made during the next few months. An enterprising pioneer, with the help of the Governments of Kenya, Uganda and the Sudan, had organised an experimental service covering 1,400 miles between Khartoum and Kisumu. As the route followed the course of the White Nile the machines would be hydroplanes. If this service was successful, from 10 days to a fortnight

would be saved in the journey between Khartoum and Uganda, and eight days between Khartoum and East Africa.

Why, therefore, should not the Northern and Southern links be forged in this African chain, and a through *aeroplane* service run at least experimentally between Egypt and Cape Town? The R.A.F. was prepared to arrange for a certain number of flights, in the course of the training programme, carrying mails and official passengers, linking up with the civil machines at Khartoum. Could not the S.A.A.F. make a certain number of flights linking up with the route at Uganda?

It would be seen, proceeded Sir Samuel, that he was proposing for their consideration the creation of these two long-distance air routes on a "mosaic plan." We were all too hard up for anyone to undertake the heavy cost of an air route to Singapore or Cape Town, and he had suggested a way, by each inserting their particular stone in the design, in which this might be accomplished. Once the pioneer services started, the formation of regular civil lines would follow.

Sir Samuel said he wished to draw attention to another very important field where the co-operation of Dominion Governments was needed, and that was the provision of landing grounds at proper intervals. Would the Governments of the Empire take their share in providing suitable landing grounds upon the great Empire routes, and keeping them in order?

Sir Samuel then passed on to the question of Empire *airship* routes, upon which subject he dealt very fully. It might be asked, he said, why should the Empire require both *airship* and *aeroplane*, and how could *airships* ever be immune from the catastrophes that destroyed the R.38, the "Dixmude," and the "Shenandoah"? As to the first, *airships* would carry out the long-distance non-stop air journeys of the future. The two *airships* that were being built should, with a normal load of freight and 100 passengers, be able to fly without refuelling in good weather a distance of some 4,000 miles, and being of great size, and practically silent, would be much more comfortable.

The *aeroplane* and the *airship* were really complementary to each other, and it was necessary, in his view, to organise both *aeroplane* and *airship* lines.

"Then," continued Sir Samuel, "there is the objection, and a very serious objection, raised on the ground of danger. There is the danger inherent in so large and fragile a structure; there is the danger of storms of unexpected and incredible ferocity; there is the danger of conflagration in a ship composed of highly-inflammable material. How can dangers such as these be ever surmounted? I would like the Conference or the Committee to examine my experts as fully as possible upon all these points. I need not tell you that, being a very cautious person myself, I have examined them again and again upon them. They and I are very far from being reckless optimists. Indeed, our attitude towards this great problem has been well described by a well-known Cambridge scientist as an attitude of 'healthy cold feet.' What I would say without fear of contradiction is that great progress has been made both on the theoretical and practical side during the last two years, and that we can claim to have made the fullest possible use of scientific theory, of full-scale and model experiment, of the testing of materials, and, by no means least important, of the study of meteorology. We believe that he have discovered many of the weaknesses and surmounted many of the difficulties that occasioned the failures in the past."

After referring to certain structural features of the two new *airships*, and to the meteorological aspect of the case, Sir Samuel pointed out, in regard to the danger of fire, that the *airship* being built at Cardington would be equipped, not with petrol, but with heavy-oil engines, which showed a great advance in the way of safety, particularly in the case of *airships* operating in tropical climates.

In all these directions, then, proceeded Sir Samuel, they had made a serious and scientific effort to avail themselves of the lessons of the past, and to avoid the dangers that had hitherto been so formidable. Slowly but surely our programme had been developing, and in a year's time the two great *airships* should be completed. It was then proposed to carry out adequate home trials and subsequently to fly at least one of the *airships* regularly to and from India for a full period of trial in tropical conditions. When these trials were completed, it was hoped, if the Dominions so desired, to make

demonstration flights to the capitals of the Empire. If these demonstration flights were to take place to Australia and New Zealand, to Canada and South Africa, the co-operation of the Dominion Governments was essential. We could not fly the two airships to the Dominions even for demonstration flights unless two conditions were satisfied. Firstly, there must be mooring masts to which the airships could be attached at the end of their journey. Secondly, there must be meteorological data upon which the choice of dates for the flight could be based, and a meteorological organisation for keeping the airship supplied with the necessary weather intelligence. These two conditions were vital to the programme, and, what was more, they were very urgent.

Although the expense need not be heavy, the provision of masts and meteorological organisations took a considerable time to complete—he was told as long as two years. If the programme of demonstration flights was to be carried out without delay, the orders for the mooring masts ought to be given immediately, and arrangements made without delay for the meteorological organisations.

"There, then," concluded Sir Samuel, "was a picture of the Empire air route programme upon which I ask for your advice and co-operation. I do not believe that I am either a fanatic or a visionary in asking your support for these schemes. If they prove successful they may give a physical unity to the Empire that it has never possessed before. Hitherto the invention of flying has brought more harm than good to the Empire and to the world. The aeroplane, the symbol of the terrible methods of modern warfare, has made these shores for the first time for centuries vulnerable to foreign attack. It has added to the budget of National expenditure, it has complicated almost every problem of defence. Let us try to redress this balance by insisting that the aeroplane shall be used not only for the purposes of destruction, but also for the objects of peace and goodwill. Hitherto the air has been the scene of glorious though terrible conflicts; it has been the background from which death and destruction have been hurled upon camp and cities. The purest of the elements was not intended for the destruction of civilisation by high explosive or poison gas. The invention of the flying machine, which the pioneers of successive centuries strove to achieve, was meant for something better than an instrument of concentrated frightfulness. With the horror of the last war in our memories and the limitless terrors of any future war in our minds, let us make the air a highway of peace, and the aeroplane an instrument, not for severing nations and destroying civilised life, but for making closer and more constant the unity of Imperial thought, Imperial intercourse and Imperial ideals."

In the discussion that followed Sir Samuel's speech, several of the Dominions' representatives, made some important speeches, from which we quote as below.

Mr. Mackenzie King, Prime Minister of Canada, said they had been thrilled by the survey given by the Secretary of State for Air of the Air Communication Programme of the Empire. It was, he thought, prophetic, but it certainly suggested a solution of many of the problems of communication between different parts of the Empire to which hitherto distance had presented formidable barriers.

"May I, first, say," proceeded Mr. King, "that the Canadian Government will only too readily co-operate with the British Government in the way Sir Samuel Hoare has

suggested, by immediately taking steps to see that mooring masts to secure the landing-places for airships in Canada are erected; also that the work of meteorological organisation is commenced forthwith."

Canada, he said, was assisting civil aviation by doing pioneer work; by establishing air harbours and aerodromes; by training of civilian pilots; by design and manufacture of new types of machines; and by the training of mechanics in technical schools. Air survey work had been developed to a greater extent probably than by any other nation, and a great deal of mapping of undeveloped and unexplored country had been accomplished, or was in the programme for future work. Aerial photography had been greatly developed, and the visits to Canada of Colonel Winterbotham, of the Geographical Section, General Staff, War Office, and Colonel Ryder, of the Aerial Survey Company, had helped to bring about close co-operation between Canada and the other parts of the Empire.

A main duty of the Aerial Services of Canada, Dominion and Provincial, was Forestry Protection. In no part of the world had it reached such a state of efficiency as in Canada.

As civil aviation had a direct relation to the creation of a military air force and served to create a reserve thereto, in this field Canada might be in a position to lend very great assistance in Imperial defence. By the Air Force Regulations, an individual who obtained a pilot's certificate automatically became a reservist. Regulations had been prepared governing the formation of an Air Force Reserve and outlining the organization of an Aviation Association with branches in each province. Finally, when it was desired to extend an airship service to Canada the Canadian Government would be ready to consider methods of co-operation, as, for example, by the establishment of air bases. Possibly Canada would also be able to assist by the provision of helium gas, which could be extracted in the Dominion.

Mr. Bruce, Prime Minister of Australia, in his opening remarks referred to the pioneer flights by the Smith Brothers, Parer, MacIntosh, and Sir Alan Cobham as examples of what could be done in regard to air development as put forward by the Secretary of State for Air. If, said Mr. Bruce, India and Burma would co-operate as suggested, they (Australia) would most certainly be prepared to consider the question of doing their part by way of experimental flights with the British squadron—such flights being of great value from the training aspect, apart from ascertaining the possibility of an air route from Singapore to Australia.

The services that had been established in Australia pointed to the fact that commercial flying was now established on a practical basis and that one could cover great distances with very great advantage. Both Mr. Coates and he had flown 500 miles during their journey to the Conference, thus saving a four-days railway journey across Australia. Mr. Bruce then gave some particulars of the civil air services operating in Australia, which he said had proved of inestimable value to settlers in the outback, by carrying mails and light freight, and by conveying medical aid or transporting sick and injured to hospital.

One contemplated air service of considerable importance to Empire development would operate on the trans-continental route between Perth and Adelaide. If this service were instituted, English letters could be delivered in Adelaide and Sydney three days and in Melbourne four days earlier than at



AT THE CROYDON DEMONSTRATION LAST WEEK: Some of the single-seater fighters getting ready to leave for their "Home Stations."

present. Replies from Adelaide and Melbourne would be enabled to catch a mail earlier than at present. With the routes now opened up the aggregate distance the services covered was 3,267 miles, and actually 7,378 miles were being flown every week, 383,000 miles a year by direct commercial service—not merely a service carrying mails, but a service carrying passengers, which was used as an ordinary means of communication.

His Government, continued Mr. Bruce, believed that commercial aviation would afford them that reserve of personnel and machines which, in an emergency, would be necessary to their fighting forces. They were going ahead in the provision of landing grounds—in all 133 landing grounds had been acquired or based and prepared for civil aviation; there were also 11 private licensed aerodromes in use.

If we got towards the point of its being practicable to continue the service from Britain to Australia, there would be no difficulties once we got to Australia with regard to landing grounds.

Mr. Bruce next referred to various flights in Australia, including that now in progress by Group-Capt. Williams to the South Pacific, particulars of which have already appeared in *FLIGHT*.

The fact that, generally speaking, the public in Australia did not contemplate it as anything in the nature of an adventure to go on a 1,400 miles, flight indicated that civil aviation had now passed completely out of the experimental stage, and he could see no possible reason why it should not be practicable to lay out the necessary landing grounds and make the necessary arrangements, so that we could have an air route running from Great Britain to Australia and similarly to South Africa. The Government in Australia believed so much in the future of flying there, that they were doing everything in their power to foster it. They were encouraging the formation of light aeroplane flying clubs, and there were three operating already, with a small subsidy for each pilot trained.

In the case of the airship itself, so far as Australia was concerned, probably they possibly together with New Zealand, would benefit most if in fact what was now hoped could be realised, and they would be only too pleased to co-operate. The matter was one of such extraordinary importance to them that he would go so far as to say that if it could be shown that there were reasonable possibilities of airships being perfected sufficiently to do the journey with safety, they would take the risk of a mooring mast, and certainly take the necessary steps to get the meteorological information that was desired.

Mr. Coates, Prime Minister of New Zealand, said that air development in New Zealand was very small—a certain amount of flying on a commercial basis had been done, but he could not say the experience had been altogether satisfactory. Meanwhile, they were devoting their attention entirely to surveys, collecting data, landing grounds, etc. So far, in New Zealand, its people had not the "flying sense," because they had not had the opportunity of obtaining it. If a line connecting the 1,200 miles between them and Australia could be established, it would immediately give them an objective at which to aim.

As regards the mooring mast and airships, New Zealand was intensely interested, but he would like to know more about it before he could say definitely whether New Zealand would become committed to the expenditure involved in the erection of a mast. They were, however, quite willing to join in any practicable scheme under which they could co-operate as suggested.

Mr. Havenga, Minister of Finance for the Union of South Africa, said South Africa had so far considered the question of civil aviation in connection with their Air Force. They did not doubt that when their country was developed further, and there was public interest, there would be opportunities for commercial air transport. In order to stimulate public interest, some time ago, they ran a demonstration air mail between Cape Town and Durban with Air Force machines and pilots, which maintained 100 per cent. efficiency. At present they were leaving this matter to private enterprise.

"With regard," concluded Mr. Havenga, "to the Imperial air scheme, so far as the Union Government is concerned, we shall be very glad to co-operate and do whatever we can. I do not think it will be possible for us to make ourselves responsible for the running of any scheme right up to Uganda; we shall certainly be prepared to maintain the service inside the Union, and as far as the sending of a few experimental flights of our Air Force is concerned I think that could possibly be arranged. We have a number of landing grounds in South Africa—about 70—and our Air Force regularly co-operates with our ordinary defence force in connection with the training

of that force. The distance between Cape Town and Johannesburg, 1,000 miles, is repeatedly being flown by our Air Force officers in a day. As far as providing meteorological data is concerned, we have a very efficient department in South Africa for the collection of such data, and the extra information that is required by the Air Minister here could no doubt very easily be obtained. As far as the question of providing a mooring mast is concerned, the Government will carefully consider that."

Mr. McGilligan, Minister for Industry and Commerce, Irish Free State, said aviation in the Irish Free State had been developed so far only on the defence side, civil flying being left to private enterprise, which had made no advance whatever. He had now control of civil aviation as far as Government intervention was concerned, and at the moment they were engaged simply in overhauling the Air Orders and Regulations, so as to bring them fully up to date and comply with all that is implied by their adherence to the International Air Convention.

Referring to the "All Red" route from Canada to the Western Coast of Ireland, Mr. McGilligan said they had hopes that the advantage of their geographical position would now be specially considered in relation to air communications. He assured the Secretary of State that if there was any way in which they could co-operate to their mutual advantage, that co-operation would willingly be given.

Mr. Monroe, Prime Minister of Newfoundland, while stating that they would be willing to help in the way of establishing a landing service, or being in a minor way useful to this (Transatlantic) service, he said they could not see how they could justifiably place an immediate order for a mooring mast. If airships could fly to Canada in 2½ days without refuelling, Newfoundland's usefulness as a stepping stone between Europe and the North American Continent would seem rather to disappear.

Lord Winterton, Parliamentary Under-Secretary of State for India, said India was destined to play a prominent part in the development of air communications between Empire countries. Any service between Europe and the Far East or Australia would on its way have to cross India, and it was reasonable to anticipate that the junction of these two routes, which would almost inevitably be upon Indian soil, would ultimately figure as one of the most vital points in the Empire chain.

India was not a beginner in the matter. The Royal Air Force had a strong contingent in the country, well provided with aerodromes at strategic points and all necessary equipment. In addition, aerodromes intended solely or primarily for civil purposes had been constructed at Calcutta and Allahabad, and land had been acquired and emergency landing grounds were being got ready in other places. Now that the British Government had entered into the contract with Imperial Airways, Limited, for the Egypt-Karachi Service, an era of more rapid development in India was one of the certainties of the near future.

It was expected that within six months the aerodrome at Karachi would be in working order and that this would be followed by important developments in the matter of internal air routes.

With this prospect in view, the whole question of the future of civil aviation in India had been recently under review by the Indian Air Board, which had laid before the Government of India an important memorandum outlining proposals for future action. The view of the Indian Air Board—which had a wide measure of influential support in India—was that the Government of India was now in a position to take, and should take, an active part in the development of air routes touching India. They proposed the Government should take steps to establish a claim to be consulted at all stages on the terms of any contract for an air service in which India was interested, whenever a subsidy or other special assistance was proposed by His Majesty's Government or a Dominion Government. They went further and urged that the Government of India should claim a right to participate as a principal in the contract, with a right to insist on the inclusion of such provisions as might be necessary to promote India's interests, taking their share—on condition, of course, that this claim was admitted—in the financial liabilities of the contract. Further, the Air Board suggested that in future all aerodromes, hangars, quarters, go-downs, telegraph and meteorological apparatus and other necessary equipment should be paid for by the Government of India and should become their property.

The Indian Air Board had recommended a systematic survey of the main probable air routes in India, giving specially early attention, in the first instance, to the Calcutta-Rangoon route, and also the provision of terminal stations,



especially at Calcutta, Rangoon, and Bombay. With the establishment of the Egypt-Karachi service, the development of internal air routes from Karachi was merely a matter of time. It had been decided, therefore, to appoint a Director of Civil Aviation, who would shortly take over his duties.

Concluding, Lord Winterton said: "It is fully realised in India that the adoption of the policy I have outlined would mean expenditure from public revenues on a considerable scale for which there would be no immediate monetary return, and that the pace at which effect could be given to the policy must depend on financial considerations. I have every hope, however, that sufficient funds can be made available to enable real progress to be made in all directions in which the need for advance has made itself urgently felt."

Mr. Amery, as Secretary of State for the Colonies, made several important statements regarding air communications in other parts of the Empire.

With regard to East Africa, the experimental route from the Sudan to the edge of Kenya at Kisumu was the outcome of negotiations between a private company and the East African Governments and Sudan Government. He had every confidence that if that experimental service should prove to be a success, the East African Governments generally would consider a further extension of the service southwards, and so be in a position to link up with Northern and Southern Rhodesia, and so with the Union. He thought, from the point of view of the establishing of white civilisation as a guiding influence over the whole of East Africa, it was very important that that region should be in close contact both with England one way and with the white civilisation rooted in the native soil in the south.

There were two other main Empire routes in the Colonial service which would be of importance: one of these was a route connecting Nigeria with the Sudan, whilst the problem of linking the West Indian islands by some cheap and speedy method of transport made an inquiry into the use of the aeroplane, or seaplane, for West Indian purposes a matter of considerable importance. Apart from the main importance in the way of communications which linked up these various scattered Dependencies to this country and to the Dominions, there was the importance of internal development. He

added that he was impressed at Croydon the other day by Mrs. Elliott Lynn pushing her little "Moth" aeroplane, fixing its wings, and then flying off. In a country like East Africa, where the white population was scattered, this sort of thing would make life much more easy, and might create a tremendous economic revolution in the possibility of the development of Africa.

Referring to the spraying of cotton fields from aeroplanes, Mr. Amery said this suggested that the greatest of all obstacles to civilisation and progress in Africa—the tsetse fly—might conceivably be some day dealt with by this method. He also referred to the importance the aeroplane could have in archaeology, as he was very much impressed during the thousands of miles he flew over Iraq by the way in which the past history of the country was revealed from above, in a manner which could never be realised from the ground.

Regarding the airship, Mr. Amery said he had always been a convinced believer in the immense possibilities of the airship, not only from the point of view of regular night and day services over long distances, but because it was going to play a great part in altering the whole internal social structure of the Empire. The whole question of the business development of more distant parts of the Empire would be fundamentally altered if the business man could spare the time within a month to run to Australia or New Zealand, see a proposition for himself fully, and come back with his report. The men who could spare the month were a hundred times as numerous as the men who could spare five or six months. It would affect, he thought, the whole question of Empire settlement.

He thought that our ideas of the shortest routes from one part of the Empire to another would be very much modified by the airship. Newfoundland might not be the handiest point between this country and Canada, but some day perhaps a normal route would be over the Polar Seas. He did not wish to adventure too far on the paths of romance, but he felt very strongly that the airship was going to be an immensely potent factor—even in our time—in all our arrangements for the future, and it did, therefore, deserve the keenest study, approached with that cautious spirit to which the Secretary of State for Air referred.

THE ROYAL AIR FORCE

London Gazette, October 26, 1926.

General Duties Branch

Pilot Officer H. E. Nowell is promoted to rank of Flying Officer with effect from Sept. 9, and with seniority of June 17; Pilot Officer on probation J. F. Dowdeswell is confirmed in rank (Oct. 4).

The following are transferred to the Reserve:—

Class A.—Squadron Leader.—J. R. Howlett (Oct. 24).
Flight-Lieuts.—E. E. Deans, D.S.O., W. E. C. B. C. Forsyth, C. Pilkington, A.F.C., W. G. Preston, D.F.C., E. P. Roberts, M.C., D.F.C., D.C.M. (Oct. 24) H. C. Black (Oct. 27); R. S. P. Boby (Oct. 28).

Flying Officers.—T. Brewin, W. Halford, D.F.C., P. Harris, B. E. Herbert, D.C.M., F. A. O'Brien, S. H. Potter, R. J. Read (Oct. 24).

Class B.—Flight-Lieuts.—S. Symonds (Oct. 24); R. E. H. Daniel (Oct. 28).
Flying Officers.—C. C. Clark, G. W. Mahony-Whitton (Oct. 24).

Class C.—Flight-Lieut.—W. S. Watson (Oct. 24).

The following Flying Officers relinquish their temp. comms. on return to Army duty:—E. M. Drummond (Lieut., Black Watch) (Sept. 6); E. C. Ridlington (Lieut., R.A.), D. Stansby (Lieut., R.A.) (Oct. 16). The short service comms. of the following Pilot Officers on probation are terminated on cessation of duty (Oct. 27):—A. E. G. Eccleston, J. W. O. Fuller, C. G. Grenfell. Flying Officer H. V. Alder is dismissed the service by sentence of General Court Martial (Oct. 11).

Stores Branch

Pilot Officer on probation G. L. Worthington is confirmed in rank and is

promoted to rank of Flying Officer (Oct. 6); Pilot Officer on probation H. M. S. Dawes is confirmed in rank (Oct. 6).

Medical Branch

H. Penman, M.B., is granted a short service comm. as Flying Officer, for three years on Active List, with effect from and with seniority of Oct. 8; Flying Officer N. I. Smith, M.B., ceases to be seconded to King's Cross Hospital, Dundee (Oct. 8); Lieut.-Lieut. T. M. Walker is transferred to Reserve, Class D.2. (Oct. 25).

Chaplains' Branch

The Rev. R. E. V. Hanson, O.B.E., M.A., is appointed Chaplain-in-Chief, R.A.F. (Oct. 25); the Rev. G. H. Collier, M.A., is granted the local relative rank of Wing-Comdr. whilst employed as Senior Chaplain (Iraq) (Oct. 1); the Rev. W. T. Rees, B.D., relinquishes the local relative rank of Wing-Comdr. on ceasing to be employed as Senior Chaplain (Iraq) (Sept. 21); the Rev. H. D. L. Viener, C.B.E., M.A., K.H.C., relinquishes appointment of Chaplain-in-Chief, R.A.F., and is placed on retired list (Oct. 25).

AUXILIARY AIR FORCE

General Duties Branch

The following to be Pilot Officer:—No. 600 City of London (Bombing) Squadron.—H. O. Young (Oct. 26).

Princess Mary's R.A.F. Nursing Service

Sister Miss W. E. Molesworth relinquishes the acting rank of Matron (Oct. 1).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Air Vice-Marshal C. A. H. Longcroft, C.B., C.M.G., D.S.O., A.F.C., to H.Q., Inland Area, Stanmore, on appointment as Air Officer Commanding; 1.11.26.

Air Commodores: F. C. Halahan, C.M.G., C.B.E., D.S.O., M.V.O., to H.Q., Cranwell, on appointment as Air Officer Commanding; 1.11.26. A. E. Borton, C.B., C.M.G., D.S.O., A.F.C., to Air Ministry, on appointment as Director of Personal Services; 1.11.26.

Wing Commander W. B. Callaway, A.F.C., to R.A.F. Depot, Uxbridge; 30.9.26.

Squadron Leader W. H. Longton, D.F.C., A.F.C., to No. 1 Flying Training Sch., Netheravon; 18.10.26.

Stores Branch

Flight Lieutenant G. F. Law, to Air Ministry, Directorate of Equipment; 1.11.26.

Flying Officers: H. Parker, to No. 60 Sqn., India; 1.10.26. F. A. R.

Smith, to No. 2 Wing H.Q., India; 1.10.26. L. L. Bray, to Station H.Q., Upavon; 15.10.26.

Accountant Branch

Flying Officers: F. H. Wakeford, to No. 1 Sch. of Tech. Training; (Apprentices), Halton; 5.10.26. C. E. Aston, to No. 503 Sqn., Waddington, 7.10.26. C. Lorimer, to No. 502 Sqn., Aldergrove; 11.8.26.

Pilot Officers: J. Lambie, to No. 4 Sqn., S. Farnborough; 11.8.26. R. A. J. Mullarkey, to R.A.F. Base, Calshot; 7.10.26.

Medical Branch

Flight Lieutenants: T. V. O'Brien, M.B., to H.Q., Iraq; 1.10.26. F. T. Allen, to R.A.F. Depot, Uxbridge; 6.11.26. R. W. White, to Aeroplane and Armament Experimental Estab., Martlesham Heath; 3.11.26. F. P. Schofield, to Palestine General Hospital; 1.10.26.

Flying Officers: P. D. Barling, M.B., to No. 208 Sqn., Egypt; 1.10.26. M. J. Marren, M.B., to Station H.Q., Upavon; 16.9.26. H. Penman, M.B., to R.A.F. Depot, Uxbridge; 1.11.26.

Chaplains' Branch

Rev. R. E. V. Hanson, O.B.E., M.A., to Air Ministry, on appointment as Chaplain-in-Chief; 26.10.26.

FROM THE FOUR WINDS

Eastward Ho! by Light 'Plane

Two members of the go-ahead Lancashire Light Aeroplane Club—Mr. T. N. Stack, club instructor, and Capt. B. S. Leete—hope to set out from Stag Lane one day this week in two D.H. "Moth" aeroplanes for a destination at present unknown, but probably India. The venture is somewhat in the nature of a holiday tour, combined with the intention of establishing a long-distance record for light aeroplanes. Both their "Moths" have been converted into single-seaters, and extra petrol tanks installed. FLIGHT wishes them both every success in their undertaking.

U.S. "Schneider Cup" Pilot Killed

LIEUT. FRANK CONANT, one of the American pilots entered for the forthcoming Schneider Cup race, was killed whilst making a practice flight on a Curtiss seaplane at Winter Harbour (near Norfolk, Va.) on October 30. Lieut. Conant had previously, on October 26, attained a speed on this machine reported to be well over 250 m.p.h.

Flying in Burma

MR. VINCENT, who has been engaged in aerial survey work in Borneo, has experienced similar worries to those which befell Sir Alan Cobham in that troublesome monsoon area in Burma. Whilst flying from Singapore to Rangoon he was forced to descend at Victoria Point by torrential rain. He proceeded on his way last week, but engine trouble brought him down near Kobin village. For some days there was no further news of his whereabouts, until on November 2 he arrived safely at Rangoon.

Flight Record

FLYING a specially equipped Sopwith "Snipe" at Henlow on November 1, Flight-Lieut. H. C. Calvey, R.A.F., established a remarkable record for upside-down flight. From an altitude of about 3,000 ft. he circled the aerodrome, upside-down, for 7 mins. 4 secs.

Australian Pacific Flight

GROUP-CAPT. WILLIAMS, who is engaged in a survey flight of the South Pacific Islands in a D.H.50 seaplane, reached Kieta, Solomon Islands, on October 30, and proceeded next day to Gizo, via Shortland Island.

New World's Record

A NEW world's record for distance in a straight line without landing was established on October 29 by the two French aviators Coste and Rignot. Starting from Le Bourget at 6.14 a.m. on the Breguet 19, with 500 h.p. Hispano-Suiza, the aviators landed at Djack, roughly half-way between Bandar Abbas and Charbar on the coast of the Persian Gulf, at 2.15 p.m., 32 hours later, having covered a distance which, pending official homologation, is estimated at 5,370 km. (3,340 miles). It had been intended to attempt to reach Charbar, but the coming of darkness prevented the French aviators from reaching their goal. The average speed, reckoned on a straight-line course, was just over 100 m.p.h., although the actual speed, owing to the route followed, was a good deal higher.

Sir Alan Cobham at the Albert Hall

ON Saturday, November 13, Sir Alan Cobham is giving two lectures on his recent flight to Australia and back, one at 2.30 p.m. and one at 8.30 p.m. The lecture will be illustrated by lantern slides from photographs obtained during the flight, and promises to be of quite unusual interest. In view of the fact that the lectures are being given on a Saturday it is advisable to book seats early.

A Featherweight Revs. Indicator

THE saving of weight is one of the shrines at which all aircraft engineers worship, and in the field of aircraft instruments this saving is one of some considerable importance, especially in view of the rate at which the number of instruments on modern aircraft continues to increase. In pursuance of a determined policy S. Smith and Sons of Cricklewood have just recently brought out a revolution indicator in which not only weight but also dashboard space is saved. The new revs. indicator measures but $3\frac{1}{4}$ in. square, has a dial of $3\frac{1}{8}$ in. diameter, and weighs but 28 ozs. If Smith's continue at this rate with their other instruments this part of the equipment will soon be a negligible quantity as regards weight.

Royal Air Force Chaplain-in-Chief

THE Air Ministry announces:—The Reverend R. F. Vernon Hanson, O.B.E., M.A., has been appointed Chaplain-in-Chief to the Royal Air Force, with effect from the 25th October, vice the Reverend H. D. L. Viener, C.B.E., M.A., placed on the retired list.

The Reverend H. D. L. Viener, C.B.E., M.A., Honorary Chaplain to the King, was educated at Malvern and St. John's College, Oxford. He served as a Chaplain in the Royal Navy

from 1901 until May, 1918, when his services were lent to the Air Ministry in connection with the organisation of the Chaplaincy Services of the then newly-formed Royal Air Force. He was appointed Chaplain-in-Chief in November, 1918.

The Reverend R. E. V. Hanson, O.B.E., M.A., was educated at King's College, London, and Emmanuel College, Cambridge. He entered the Royal Army Chaplain's Department in 1900, and transferred to the Royal Air Force in November, 1918. During the past two years, he has been officiating as R.A.F. Chaplain at Manston.

Air Mail Suspension

THE Postmaster-General announces that the Königsberg-Moscow Air Mail service (shown under Route 9A, on page 2 of the current Air Mail Leaflet, July, 1926 edition) will be suspended for the winter as from October 30. The last despatch of letters for onward transmission to Russia by this service was accordingly that closed at the General Post Office, London, at 6 p.m., on October 28.

Royal Air Force Flying Accident

THE Air Ministry regrets to announce that as the result of an accident at sea, $5\frac{1}{2}$ miles north of Valletta, Malta, to an Avro "Bison" of No. 423 Flight, on October 21, Hugh Nelson Lay, Lieut., Royal Navy, Flying Officer, Royal Air Force, the pilot of the aircraft, Lieut. Joseph Ennis Sclater Anderson, Royal Navy, Lieut. Henry Leigh Carslake, Royal Navy, and No. J.81144 Telegraphist Robert William Gibbs, Royal Navy, were drowned.

PUBLICATIONS RECEIVED

Aeronautical Research Committee. Reports and Memoranda: No. 1019 (Ae. 220)—Note on a Hot-Wire Speed and Direction Meter. By L. F. G. Simmons and A. Bailey. February, 1926. Price 9d. net. *No. 1027 (Ae. 225)*—Test of Two Aerofoils, R.A.F. 27 and R.A.F. 28. By A. S. Hartshorn and H. Davies. April, 1926. Price 9d. net. *No. 1038 (M. 47)*—Report on the Accelerated Ageing of "Y" Alloy. By S. L. Archbutt and J. D. Grogan. April, 1926. Price 9d. net. H.M. Stationery Office, Kingsway, London, W.C.2.

AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

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Published November 4, 1926

- 12,159. AIRSHIP GUARANTEE CO., LTD., B. N. WALLIS and C. D. BURNEY. Lighter-than-air aircraft. (259,264.)
- 17,675. LORD INVERNAIN (W. BEARDMORE) and A. E. L. CHORITON. Structural casings of i.c. engines. (259,313.)
- 18,295. O. GEISLER. Mooring devices for lighter-than-air craft. (259,324.)
- 23,751. M. A. SZYMANSKI. Airships. (259,371.)
- 28,794. F. W. PEPPER. Screw propellers. (259,408.)

APPLIED FOR IN 1926

Published November 4, 1926

- 7,386. ARMSTRONG SIDDELEY MOTORS, LTD. and S. M. VIALE. Air-cooled cylinders for i.c. engines. (259,462.)
- 14,167. SOC. ANON. DES AVIONS M. WIBAULT. Hub caps for aircraft propellers. (257,227.)

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